## Amendments to the Claims

Please cancel claim 11; replace claims 4, 5, 10, 12, and 13; and add new claims 15-24, all as shown below. Applicant reserves to prosecute any originally presented or canceled claims in a continuing or future application. All currently pending claims in the Application are reproduced below, including those that remain unchanged by this Response.

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1.    (Original)    A method of making a plan for circuit synthesis, comprising the steps of:
        determining a circuit comprising at least one set of circuit elements;
        identifying a set of parameters for construction of said circuit elements;
        simulating operation of said circuit at a set of points, each point defined by varying at least one of said parameters;
        consolidating results from the simulation operation; and
        storing the consolidated results of said simulation in a behavioral model of said plan.

2.    (Original)    The method according to Claim 1, wherein said step of consolidating comprises the step of placing the results of said simulation in a tabular form that correlates each of said set of points to a corresponding result of said simulation.

3.    (Original)    The method according to Claim 1, wherein said step of storing comprises the steps of:
        fitting a polynomial equation to results corresponding to at least two of said set of points; and
        storing the polynomial equation in a behavioral model of said plan.

4.    (Currently Amended)  The method according to [any one of Claims 1 to 3] Claim 1, wherein said circuit elements comprise at least one analog component.

5.    (Currently Amended)  A method of mixed signal circuit simulation, comprising the steps of:
        creating one or more plans for use in circuit synthesis, each plan being created by
                determining a circuit comprising at least one set of circuit elements,
                identifying a set of parameters for construction of said circuit elements,

simulating operation of said circuit at a set of points, each point defined by varying at least one of said parameters,

consolidating results from the simulation operation, and,

storing the consolidated results of said simulation in a behavioral model of said plan;

selecting a plan for a circuit to be designed;

providing the selected plan and a set of performance requirements to a synthesis engine;

executing the plan; and

retrieving results of the executed plan.


6.      (Original)       The method according to Claim 5, wherein said results comprise at least one of a sized netlist, a datasheet, and a simulation script for verification of the circuit designed.


7.      (Original)       A method of behavioral circuit design optimization, comprising the steps of:

determining a circuit comprising at least one set of circuit elements;

identifying a set of parameters for construction of said circuit elements;

simulating operation of said circuit at a set of points, each point defined by varying at least one of said parameters;

fitting a polynomial curve to a result of the circuit simulation at each of said set of points; and

selecting a set of said circuit parameters for an optimized circuit based on said polynomial curve.


8.      (Original)       The method according to Claim 7, wherein:

said step of simulating comprises the steps of:

setting each of a subset of said parameters to a fixed value;

setting at least one remaining parameter of said set of parameters;

simulating operation of said circuit to produce a result;

varying said at least one remaining parameter of said set of parameters; and

repeating said steps of varying and simulating for a predetermined number of iterations.


9.      (Original)       The method according to Claim 7, further comprising the steps of:

repeating said steps of simulating and fitting to produce plural data point sets of simulation results; and

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wherein said step of selecting comprises the step of selecting an optimized circuit solution from the plural data point sets.

10.   (Currently Amended) A mixed signal synthesizer, comprising:

a synthesis engine configured to determine an optimized circuit and produce a sized netlist based on a plan having a circuit design and parameters for optimizing the circuit[.]

a synthesis plan library having a set of synthesis plans for at least one circuit, each synthesis plan having a circuit design and a set of parameterized values regarding any of physical characteristics and values of circuit elements, said synthesis plan being created by

determining a circuit comprising at least one set of circuit elements,

identifying a set of parameters for construction of said circuit elements,

simulating operation of said circuit at a set of points, each point defined by varying at least one of said parameters,

consolidating results from the simulation operation, and,

storing the consolidated results of said simulation in a behavioral model of said plan; and,

a user interface configured to allow a user to select a synthesis plan from the library and input the plan and a set of at least one performance characteristic to said synthesis engine.

11.   (Cancelled)

12.   (Currently Amended)  The mixed signal synthesizer according to Claim [2]10, wherein each synthesis plan includes at least one of a non-sized netlist, a topology, a synthesis model, a test script, a test harness, a cell definition, a cell model, a starting point table, and a characterization plan for said at least one circuit.

13.   (Currently Amended) The mixed signal synthesizer according to Claim [12]10, further comprising:

a synthesis toolset having tools selectable for use by said synthesis engine.

14.   (Original)     The mixed signal synthesizer according to Claim 13, wherein said tools comprise at least one of  an optimizer, a simulator, a characterizer, and a parasitic calculator.

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15.     (New)  The method according to Claim 2, wherein said circuit elements comprise at least on   analog component.

16.     (New)  The method according to Claim 3, wherein said circuit elements comprise at least one analog component.

17.     (New) A system for mixed signal circuit synthesis comprising:

a user interface for designing a circuit, wherein said circuit comprises a plurality of circuit elements;

a simulator that simulates the operation of said circuit at a set of points, each of said set of points defined by varying at least one of a plurality of design parameters associated with said circuit elements;

a plurality of synthesis plans that store the consolidated results of said simulations in behavioral models; and,

a user interface that allows a user to select and use any of said synthesis plans for mixed signal circuit synthesis.

18.     (New)  The system according to Claim 17, wherein said consolidated results include the results of said simulation stored in a tabular form that correlates each of said set of points to a corresponding result of said simulation.

19.     (New)  The system according to Claim 17, wherein said plan includes a polynomial equation fitted to results corresponding to at least two of said set of points; and the polynomial equation in a behavioral model of said plan.

20.     (New)  The system according to Claim 17, wherein said circuit elements comprise at least one analog component.

21.     (New) A method for mixed signal circuit synthesis comprising the steps of:

allowing a user to construct a circuit comprising at least one set of circuit elements;

identifying a set of parameters for construction of said circuit elements;

simulating operation of said circuit at a set of points, each point defined by varying at least one of said parameters;

consolidating the results from the simulation operation;

storing the consolidated results of said simulation in a behavioral model of a synthesis plan; and,

selecting and using said synthesis plan for synthesis of mixed signal circuits.

22.    (New)  The method according to Claim 21, wherein said step of consolidating comprises the step of placing the results of said simulation in a tabular form that correlates each of said set of points to a corresponding result of said simulation.

23.    (New)  The method according to Claim 21, wherein said step of storing comprises the steps of: fitting a polynomial equation to results corresponding to at least two of said set of points; and, storing the polynomial equation in a behavioral model of said plan.

24.    (New)  The method according to Claim 21, wherein said circuit elements comprise at least one analog component.